Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WHAT’S IN THE BAG

chemical vs physical change lab

Define **Physical Change**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

List indicators of a physical change: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Define **Chemical Change:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

List indicators of a chemical change: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Materials:**

3 ziplock bags Calcium choloride Sodium bicarbonate

Phenol red water graduated cylinder

*Procedure:*

**BAG ONE**

1. Place 1 spoonful of sodium bicarbonate into the plastic bag
2. Record your observations
3. Add 10 mL of water to the plastic bag.
4. Quickly flatten the bag to remove any air and seal the bag
5. Tilt the bag back and forth to wet all of the solids
6. Record your observations

**BAG TWO**

1. Place 1 spoonful of sodium bicarbonate into the plastic bag
2. Record your observations
3. Add 1 spoonful of calcium chloride to the plastic bag.
4. Quickly flatten the bag to remove any air and seal the bag
5. Tilt the bag back and forth to mix all of the solids
6. Record your observations

**BAG THREE**

1. Place one spoonful of calcium chloride into a plastic sealable bag.
2. place 1 spoonful of sodium bicarbonate (BAKING SODA) into the bag. Seal the bag, shake it and see if a chemical reaction takes place.
3. measure 10 ml (or 2 teaspoons) of indicator solution. Carefully add it to the bag. Flatten the bag to remove the air and seal it.
4. Tilt the bag back-and-forth to wet all of the solid.
5. observe the reaction. If the bag gets tight due to pressure, open the seal to release the pressure, then reseal it.
6. Record your observations

**Carefully clean up your lab area: throw all plastic bags into the garbage, wipe down your table and return your goggles to the goggle cabinet**

Data Table:

|  |  |  |  |
| --- | --- | --- | --- |
| **Bag** | ONE | TWO | THREE |
| **Materials Mixed in the Bag** |  |  |  |
| **Observations Before Mixing** |  |  |  |
| **Observations while Mixing** |  |  |  |
| **Observations after Mixing** |  |  |  |

**Answer the following:**

1. How was this experiment in bag one different than the one in bag three?

b.) what type of change occurred in bag one (chemical or physical)? How do you know?

C) what type of change occurred in bag three (chemical or physical)? How do you know?

d.) Why does the bag inflate?

e.) Does the reaction get hot or cold initially?

f.) Does the reaction get hot or cold after 1 minute?

g.) How does this lab illustrate the difference between a physical and chemical change?